Developing a Delta Vision: How to Connect the Dots

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CONFERENCE SUMMARY

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DELTA VISION
PROJECTS & ACTIVITIES IN THE DELTA
HABITAT PROTECTION / ECOSYSTEM RESTORATION
Delta In-Channel Islands Project
Delta Regional Ecosystem Restoration (DRERIP) (DFG)
Flooded Islands Project (DWR)
HCP/NCCP
Contra Costa County
Delta
East Contra Costa County
Solano County
Yolo County
Long Term Environmental Water Account (DWR)
Lower Yolo Bypass Collaborative (Yolo Basin Foundation, DPC)
North Delta Wildlife Refuge (FWS)
Stone Lakes CCP (FWS)
Suisun Marsh Plan (FWS, USBR, DFG)
Yolo Bypass Wildlife Management Plan (DFG)
Yolo County Parks - Open Space and Parks Master Plan
YOLO
2. PROCESS
a) KEY OUTCOMES?
b) HOW BUSINESS PROCESS IS TRUSTWORTHY & CREDIBLE?
3) DATA
What don't we know that we need to Know?
4. What Are The Elephants In The Room?
5. What
be Taken

JUNE 6, 2006

Welcome and Opening Remarks

Gary Miller opened the conference with an invitation to engage in a creative and forward thinking process that seeks consensus across the broadest range of perspective. Universities are engines of engagement in communities and are committed to citizen leadership grappling with intractable issues, serving as partners in collaborative efforts. The challenge of the Delta vision is to find a way to see the Delta as an integrated region, while addressing levee issues, 100-year flood protection, and finding a way to implement the vision into action. This creative effort will require thoughtful and considerate approaches as state and local resources and perspectives are integrated into finding workable solutions to sustaining the Delta. Gary welcomed the audience to two days of deliberation and dialogue.

Why We Need a Delta Vision: What's at Stake...?

Panelists:

Moderator: **STEVE MACAULAY**, *Executive Director, California Urban Water Agencies*
GARY BOBKER, *Program Director, The Bay Institute*
DOMINIC DIMARE, *Vice President, Governmental Relations, California Chamber of Commerce*
LINDA FIACK, *Executive Director, Delta Protection Commission*
TIM QUINN, *Vice President, State Water Project Operations, MWD of Southern California*
SEAN SNAITH, *Director, Business Forecasting Center, Associate Professor of Business, Eberhardt School of Business, University of the Pacific*

Steve Macaulay opened by recounting his visions of the Delta: his first fishing trip to Snodgrass Slough. Tomato canneries. Sugar mills. Asparagus and corn. The TV towers at Walnut Grove. The Yolo Causeway in 1986. Staten Island stewardship. Tractor dust. Holt Brothers Caterpillars. Alex Hildebrand. Freighters on the way to Stockton. Sandbagging levees. Pumps, pipelines, siphons and ditches. A special place; a working landscape

The Delta is a snapshot of changing conditions. The system is not what it used to be. It's highly unlikely it will look like it is 100 years from today.

– Gary Bobker, The Bay Institute

MACAULAY: Fourteen years ago, then-Gov. Wilson said that "the Delta is broken." What's broken and what's not?

BOBKER: I think the question is "is the Delta sustainable for the uses we put on it?" My answer would have been different a few years ago. The Delta is a snapshot of changing conditions. The system is not what it used to be. It's highly unlikely it will look like it is 100 years from today. My answer a few years ago would have been that the sustainability of the Delta was a long term issue, that the Delta was being affected by death of a thousand cuts.

We changed the way the water comes into the Delta. We divert water from the Delta. We changed the physical configuration of the Delta. In terms of environmental management; we tried to fix problems with little Band-Aids, whether it's the Environmental Water Account or habitat acquisition. Not to belittle those efforts. But given the scale of change – the trends toward urbanization in and upstream of the Delta and exercising new water rights – over the long term the Delta was not sustainable. Today I'd say it's not unsustainable but the sustainability factor has increased by an order of magnitude for many reasons that we all know, whether it's climate change or earthquakes. In some ways I am more concerned with long-term climate change than the catastrophic earthquakes. Earthquakes result in can-do spirit to fix it. But in the long term it's not the catastrophic scenario that worries me; it's the long term changes that will result from things like sea level rise, precipitation pattern changes and land use changes. The Delta that we know today is just not going to exist 100 years from now. We need to start thinking about what it is we want the current area to be 100 years from now.

MACAULAY: What is driving the regional Delta economic engine?

SEAN SNAITH: The big story in the Central Valley and Bay Area is growth. The Bay Area locomotive is pulling the Central Valley communities along. The region provides affordable housing for commuters. The Bay Area and Central Valley regional economies are linked now and in the future. Transportation and the linkages between these areas in terms of highways, railways or waterways are essential for the economic growth in the future. Not only transportation but transmission in terms

of utilities that has to be transmitted through the Delta – interwoven with the health of Delta and the system of levees.

MACAULAY: Do you think the transportation and transmission values you just spoke about have a long term vision? Are the transportation and [utility] transmission [uses] working with land use?

SNAITH: It's a patchwork of regional agencies and public and private interests. Is there a cohesive master plan? Not that I'm aware of. But I think it's important that we have communication between these groups to develop an optimal path to use resources efficiently.

MACAULAY: We once had another Delta vision – called CALFED. That was a pretty strong vision for the Delta. Actions that focused on the Delta and outside the Delta. What was wrong with that vision?

TIM QUINN: It was too short-sighted. This is a huge, complex political problem. Five governors in the last half-century have tried to deal with the Delta problems. Only [former] Gov. Reagan didn't. There are tremendous political and technical challenges. CALFED in 1998 punted. I am a big fan of CALFED, but the ROD [Record of Decision] was a well thought- out game plan but it was a game plan for only phase one. And we all hoped that the physical Delta that we were dealing with was sustainable. And along came Jones Tract, Katrina, the pelagic fish crash. We are now confronted with the fact that we need to deal with the elephants that are in the closet that we haven't been able to deal with for well over a half a century. The fate of the Delta is literally at stake. The whole state, for better or worse, owns the Delta.

MACAULAY: Much of California just doesn't see the Delta. Yet the Delta is very important to southern California's – the entire state's – economy.

DOMINIC DIMARE: Given the hydrological nature of the Delta; it is difficult to establish a sense of place for an ecosystem and an economy in a place that's supposed to change by way of nature. From the chamber of commerce perspective the Delta is a throughway for water, goods movement on Highway 12 and the railroad, gas fields, agriculture, tourism value and recreation. Its value is tremendous from an overall business interest. If there were an earthquake, the effects on the economy would be severe; with severe disruptions of the infrastructure – water deliveries, railroad traffic, disrupt highway traffic and create a tremendous burden on the state coffers to rectify any disaster that were to occur.

MACAULAY: You might agree that a Delta vision is needed from an economic standpoint not only for the regional economy but the state economy as well.

DIMARE: Yes and no. A vision is needed; it's nice to have a master plan, but I also like the individuality of the region – the communities are very, very different and a Delta vision needs to recognize the individuality of the area.

MACAULAY: The Delta Protection Commission was formed precisely because of the land use pressures we are seeing today; to protect the Delta's core. Is more needed?

LINDA FIACK: The Delta is located in five counties within three regions with multiple reclamation districts and water agencies involved so it's important that there be some structure to have some cohesiveness. We need to recognize that diversity and bring some cohesiveness to the region. It can't be just top level coming down, it needs to start with the stakeholders. It's more than levees and fisheries; it's ag, habitat and recreation…. The important thing we need to keep in mind is that the Delta Protection management plan is 12 years old. A lot has happened and there's a lot more knowledge. We're all learning that we can't write documents on status quo preservation of the Delta. It has to have adaptive management. It can't be done through an umbrella organization. We need integration.

We are now confronted with the fact that we need to deal with the elephants that are in the closet that we haven't been able to deal with for well over a half a century. The fate of the Delta is literally at stake.

– Tim Quinn, MWD

MACAULAY: Each city and county in the region has its own general plan. Why aren't they collectively good enough for Delta land use planning? What is missing?

FIACK: The Delta Management Plan for the primary zone is technically and legally adopted in each general plan. We need for it to be integrated in these general plans; not just referred to. We need communication with everyone at the local level so that they understand the importance and uniqueness of the Delta to make plans that are consistent with that and want to do that to protect the Delta.

Macaulay: Water and fish have dominated the debate in the last 40 years. Can water supply and fish protection coexist? Is a new plan needed or is business as usual with the current CALFED vision good enough ?

Quinn: I don't think business as usual is good enough. Sustainability in the Delta requires a major rethinking of how we manage water in this state. The MWD board adopted a new Delta statement this year. Aware that one of the big roadblocks has been the north vs. south water argument. The first part of the policy discusses Delta sustainability, which is very significant, with a strong emphasis on local resource development – urging the rest of the state to invest in local resources. Without that step, we don't think a sustainable Delta is possible. It does emphasize the importance of Delta water exports to us and the rest of the state, but in our own particular case, we are interested in maintaining what we have access to today. We are not looking to increase our supply. We're trying to make clear that this is not just a L.A. water grab; we're trying to change the nature of the debate.

The Chamber has pleaded, begged, cajoled to try and get offstream storage built in this state for the last 20 to 25 years.

– Dominic Dimare, California Chamber of Commerce

Bobker: The direction MWD is going is good. Self-reliance for water supplies reduces vulnerability and reduces pressures on the Delta. Self-reliance is a good lesson for others. The Bay Area could do more. The Delta of the future; if it is going to support any kind of ecosystem and native fish, we need to divert less water. Global warming and climate change make this that much more important. There will be less reliable snowmelt; we will have to reduce use. Agriculture is a healthy and vital part of the Central Valley's economy, but we may not be able to continue deliveries to the west side of the San Joaquin Valley. I think in the long run we're going to have to make some decisions about whether we can continue to divert the same amount of water out of the Delta as we do today.

Macaulay: What's at stake? Do areas outside see the threat the way Gary sees it?

Dimare: I'm having flashbacks. The north vs. south paradigm doesn't exist anymore. It's more developed vs. developing communities, or urban vs. ag. Transfers and conservation can cause some fear; there are some risks invested in joint ventures with agriculture in northern California – what if they want the water back? Global warming means less reliable snow pack and faster snow melt. The Chamber has pleaded, begged, cajoled to try and get offstream storage built in this state for the last 20 to 25 years. Each bond has had study money for these types of facilities but no bricks and mortar. We think offstream storage will help with the effects of global warming. We can capture water earlier in the year, it will help reliability. Like it or not, growth will continue. We need to manage growth and water reliability.

Quinn: The notion that we can rise to this challenge without investing in infrastructure is foolhardy. The MWD policy [regarding the Delta] calls for sustainability and flexibility. When you apply those common sense rules, there will be parts of California that will need more from some source of supply. Can we do this without major investment in infrastructure? I don't think so. So let's focus on the infrastructure we need.

Fiack: We need to keep away from statements that it's "only" ag land. Or it's only for recreation. Or that this is only a small community. We need to recognize that all aspects are important and build on that. The issues are not driven just by water, tourism, etc. alone. We all know that infrastructure's important and that the water aspect is important but we cannot lose sight of other issues and perspectives.

Macaulay: There has been a lot of discussion about the threat to Delta levees and the fear of catastrophic failure of the levees. Roads across islands that might flood, or be below sea level because of climate change. Regional economy … how do we get all these communities, general plans, transit plans knit together to recognize Delta levees and other concerns?

Snaith: The idea of a gross Delta product… how to calculate it. Would L.A. be included? At a minimum value the gross Delta product is hundreds of billions of dollars. If you want to include southern California because it is relying on this resource then we're talking half a trillion to three-quarters of a trillion dollars. Another point about the variety of agencies is not to expect one metro community with a long term plan; we need to be aware of the fallacy of composition: what's true or optimal for one is not necessarily true or optimal for the whole. One community's strategic plan might be optimal to them but not optimal to the whole. The question is how do we make that happen?

FIACK: Four of the five Delta counties are going through general plan updates. There is the Sacramento Council of Governments and the state parks' processes and also the DFG and DWR visioning processes… We have to be cognizant of each others' plans and the important factor that it comes down to is communication and inclusion and that the agencies are aware of what's going on. It has to move beyond the agencies involved in CALFED to include the local agencies.

DIMARE: We ask the Delta to do a lot for a lot of different interests. The difficulties in the CALFED process is it promised because of the work that we'll do together. The issue will be what do they get to do with their land or their water. We will probably need to ask someone to take one for the team. For example, to build a floodway, we will need to compensate people to purchase the land to provide for the floodway. Inherent in that decision is that the value of the land here is higher than the value there. We need a plan with flexibility, sustainability and durability. Those are the things that are necessary in planning. These are the qualities that any plan that comes out needs to have.

MACAULAY: Referred to the work/presentations by Jeff Mount. He has gotten everyone's attention regarding flood risk, subsidence, etc. What are the consequences of business as usual?

BOBKER: There is no question that we must continue to maintain the levees in parts of the Delta. But we need to make decisions about where we are going to do this. Does society want to spend gazillions of dollars to maintain in perpetuity the Delta as it is now – a highly armored levee system? I don't think so. But we need to ask the question and we need to address such difficult questions head-on, which we don't usually do. The future sea level rise will increase the major threats to the sustainability of the levees. It will shift salinity inward. Do we want a heavily armored Delta? Where will brackish water habitat go as salinity moves inward? What about drinking water? The climate is predicted to bring more intense flooding and less reliable snowmelt – perhaps floods that are twice the size of the historic floods of record. Water will flow through the Delta faster. How should peak floods be attenuated? Maybe we need to create a floodplain/habitat around the Delta. Regarding storage, we should not focus on individual problems and interest groups. The water system needs to adapt and change for the future.

MACAULAY: Asked Tim to respond.

QUINN: I substantially agree with what Gary said. I was hearing Gary pick up on a theme I used earlier. Social values are changing. We built a lot of dumb infrastructure that reflects the old 19th century values. Now there is more emphasis on resource protection. Gary is saying you're going to have to change your infrastructure and how you operate your infrastructure. I worry a bit about climate change, but let's not let that be an excuse to not make decisions about the system we have today. Because we have a system with dumb infrastructure from a bygone era. And we need to replace old infrastructure with infrastructure that can help reduce conflict. And that's going to require investment today.

At a minimum value the gross Delta product is hundreds of billions of dollars.

– Sean Snaith, University of the Pacific

MACAULAY: How do we define success for a Delta vision? Recognizing that the administration is going to launch a major effort to craft a Delta vision, what do we use as the metric for success up front?

SNAITH: Not interfering or restricting the economic growth of the state of California. No levee breaks that affect transportation or water supply. No problems with getting water to where it is needed. Anything that would impede economic growth would be some sort of failure.

BOBKER: We need to re-create the Delta ecosystem in some way. It is impossible to restore the old Delta. We need to restore native species and develop alternate habitat for the area that has been displaced. Water exporters need a new reliance on local supplies. We need to ensure that we are reducing pressure on the Delta ecosystem and they need to reduce their vulnerability to the Delta [problems]. We need to end the promotion of policies that move people into areas of risk of flooding. The Delta is a culturally unique place. I would hate to see it disappear. We need to find a way to preserve some of it, but not lose sight of other needs. We need an honest discussion about winners and losers, we have to assess risk. We need to have an honest conversation about what we can't do.

QUINN: I like the theme of sustainability, durability and flexibility. The Delta today is none of the above and making it fit that theme is going to require major change. We need to find a way to sustain the fish. We need a durable water supply. And we need flexibility so we don't put everyone in a straight jacket. We need to apply the same common sense principles to everyone but recognize that not everyone fits the same mold. The governor's vision should not be a master plan of the Delta. The visioning process's job is to fly at 30,000 feet, look at the process we have today and help us deal with the elephants in the room. Look to the Little Hoover Commission report on CALFED. It suggested a common-sense assessment of the issues and the general direction we should move. MWD is promoting actions for improved water quality and we want a more stable system with a focus on long-term sustainability of the system. Not doing anything is not acceptable to the business community.

The stakeholders need to step up, come forward and really be at the table and not stand back and criticize the vision statement that results.

– Linda Fiack, Delta Protection Commission

FIACK: The process is as important as the outcome if you're measuring success. We need to decide how to bring recognition that we want everyone at the table. Focus with the Delta region first and not have science imposed on the stakeholders or stakeholders not recognizing the importance of the science. We need to be willing to compromise and recognize each other's needs. The stakeholders need to step up, come forward and really be at the table and not stand back and criticize the vision statement that results.

DIMARE: Everyone's vision if the Delta is different. The successful outcome would be a process that created a dialogue that will lead to collaboration and respect. There will be winners and losers. In that regard you have to respect the economic value and aesthetic value – need compensation for asking them to forego their vision for the land they own. Short of a process that creates a dialogue and respect for these very different values … there is no success. •

Fitting Together the Pieces of the Puzzle: Delta Land Use Planning and Growth

Panelists:

MARCI COGLIANESE, *Member, Bay Delta Public Advisory Committee*
MIKE EATON, *Director, Delta/San Joaquin Valley Projects, The Nature Conservancy*
NINA GORDON, *Senior Policy Coordinator, Strategic Planning and Policy Division, California Department of Parks and Recreation*
BUTCH HODGKINS, *Member, State Reclamation Board*
DAVID SHABAZIAN, *Senior Planner, Sacramento Area Council of Governments*
Moderator: **PATRICK JOHNSTON**, *Former State Senator*

PATRICK JOHNSTON: The Delta Protection Act, which I authored [signed into law in 1992] and the creation of the Delta Protection Committee sought to address use of Delta lands. Developers and local governments were willing to support the Delta Protection Commission as long as they could build out their areas of the secondary zone that was developed and planned for development. It is up to the state and hopefully the local governments to recognize the importance of protecting the primary zone for agriculture, wildlife habitat and recreation. That 1992 legislation might be improved upon to create a more protected Delta. Has the Delta Protection Act been effective at protecting the Delta from excess urbanization?

MARCI COGLIANESE: Yes and no. The act has done a good job in the primary zone, but the impacts of development in the secondary zone on the primary zone were not recognized when the act was adopted. Now they are inescapable. We have impacts everywhere you look. In Rio Vista, 40 years ago, a big truck was a rare sight on Highway 12. Now, the highway serves as a pipeline between the Port of Oakland and the Central Valley. The sense of ourselves is being threatened by the people moving to and through the Delta. A lot of people are trying to escape congestion and the more urbanized regions and are moving to the Delta. The price of housing has gone up. The pressures are there. Without the Delta Protection Commission, there would have been no opportunity for us to come together and work with the agencies and know what is happening. When CALFED came in, there was a big question about where the Delta Protection Commission would fit in. The Delta Protection Commission was the only place to bring local people together to learn about these values and give state agencies the message of the impacts. Without new tools I don't think it's going to be able to deal with the current urbanization challenges and preserve the base land use – agriculture, habitat and recreation.

MIKE EATON: The Delta Protection Commission is a miracle of political economy. Considering their staffing and support, they have accomplished far more proportionally than any other entity. It has provided focus and identity to the Delta and political empowerment to the locals. Where the legislation failed is that it did not recognize the need for the Delta Protection Commission authority and scope to continue to evolve as the challenges facing the Delta continue to evolve. We had a chance two years ago when the Legislature considered giving the Delta Protection Commission conservation land authority. It did not happen. We need more recognition of saving habitat and handling urbanization. We should use the commission as a base to tomorrow's reality.

JOHNSTON: Nina, you see the work of the Delta Protection Commission from the recreation perspective. What's going on there?

NINA GORDON: I would like to give credit to the commission because the idea of a vision and a broader mission is so important and getting everyone at the table together is the first step in doing that. Within that the State Parks' mission is for natural recourses, culture and recreation preservation; recreation is very important for tying together that community support and the need for preservation to provide for recreation activities. The act includes lots of recreation values. What we want to do is take advantage of the Delta Protection Commission for more collaboration and possibly to provide for more recreation such as welcome centers and visitors centers.

In Rio Vista, 40 years ago, a big truck was a rare sight on Highway 12. Now, the highway serves as a pipeline between the Port of Oakland and the Central Valley.

– Marci Coglianese, Bay Delta Public Advisory Committee

JOHNSTON: Butch, has the Delta Protection Commission been constructive? What improvements would you recommend?

BUTCH HODGKINS: The concept of making the surrounding counties aware of relationship to Delta from a statewide perspective; that didn't happen. The act created the perception outside [the Delta] that you couldn't develop in the primary zone but you could develop in the secondary zone. A project in the secondary zone will just go through like any other project. The urban areas' relationship to the Delta and the importance of the Delta from a statewide perspective simply did not happen.

Now we have the dynamic in the valley from Chico to Firebaugh where people are moving farther out because they can afford a bigger house. They don't seem to care about the problems with the commute, etc. The Delta Protection Commission in a way helped create leapfrog development, perhaps contrary to the intended purpose to protect the primary zone. People are going to cross the primary zone. They don't mind the commute and that has resulted in unanticipated impacts to the primary zone. It was a bold stroke and a great try but it didn't go far enough in integrating planning.

JOHNSTON: How does the Sacramento COG look at land use decisions in and around the Delta?

DAVID SHABAZIAN: We're always aware of downstream impacts and even more aware of that given the flood concerns. Having said that, there hasn't been enough planning around this. The visions and goals are good, but a broader scale is needed. We need to take this beyond the six counties and identify how decisions in one area affect another.

JOHNSTON: What would be an example in Sacramento where it worked well and where it hasn't? Telling people how they make decisions and a different pattern of land use are two different things. You can plan for planning's sake but has SACOG made a difference in housing patterns, density or flood protection?

SHABAZIAN: We are just now implementing this plan which was completed in 2004. SACOG has no land use authority. We are asking cities to consider the plan. Our purpose was to demonstrate how land use impacts would lead to a reduction of air pollution in the county, which was our primary focus. Rancho Cordova took the blueprint for their general plan and will be able to reduce land consumption, water use and the amount of area that needs flood protection. The city of Sacramento and county of Sacramento have looked at the plan and are incorporating it. We're not going to get the blueprint exactly as it is on the ground, but we will see some of the principles enacted.

JOHNSTON: Does SACOG have a recommendation on whether development should occur in the Delta's secondary or primary zone?

SHABAZIAN: No. But the objective of the blueprint was to tighten up the urban boundaries. It saved roughly 230,000 acres of land consumption by shrinking the urban footprint.

EATON: When the plan was started there was little interest in flooding, which illustrates the cyclical nature of our interest in flood protection. That was a mistake. The plan is somewhat development-driven and the ultimate blueprint map showed development in a known flood-prone area known as the Elkhorn area. You need criteria and you need flexibility so you can expand your flood control system. That 10,000 to 12,000 acres Elkhorn area is in an area that has had previous levee failures, which, in turn, gave flood relief for downstream areas. To continue to give up those areas that provide

such relief will be fatal to the Delta. I'm hopeful that SACOG will rethink that particular decision.

SHABAZIAN: That is a fair point, but the blueprint is a multipurpose plan. And its objective to reduce the amount of congestion and put housing close to downtown is a good objective. It provides an opportunity to expand transit into the outlying areas. You need to step back and say building in Natomas may not be the best decision in terms of flood control and downstream impacts, but other goals we have in the region of trying to reduce commutes …

COGLIANESE: I'm a big supporter of COGs because they are the only place where local entities look outside their boundaries to consider larger impacts. But regional planning COGS are still not good enough. We need to link the COGs so you consider the effects in nearby areas. We also need to consider state resources. This is a very difficult task that requires a combination of deft state leadership and local response to that leadership. We're in a lifeboat and we need to make big decisions quickly. Local government is very deliberate, which is very important so the public is involved. But it doesn't succeed in dealing with the big picture.

It is very difficult to make decisions that last a generation or more. CALFED was looking at a decision in a five-year timeframe. We need to somehow get up on the mountain to look down and see how all the issues are interconnected. The watershed concept. If we're gong to make good decisions we've got to be educated, motivated and we have to understand that we can't sit on the sidelines. We are all connected to one another through the Delta and what we do impacts the Delta. We need ownership outside the Delta for fixing its problems.

JOHNSTON: The state's main interest relates to water. Does what happen on the land matter? And how much does it matter?

COGLIANESE: I think it's more than water and I think that's what the state must now figure out. We have housing allocation mandates that come down from the state. We are told we have to take the Department of Finance projections and plan for housing that will be coming to our region to take our fair share.

JOHNSTON: So the state of California is forcing Rio Vista to have more housing than it otherwise might choose to?

COGLIANESE: Actually, I have a good example of this. Solano County, by an initiative approved by its voters, decided that all this development was going to go in cities – leaving the unincorporated area primarily ag. But the ABAG [Association of Bay Area Governments] housing requirements that came down from the state did not consider the county's goals. All the cities had to sit down together and figure out how to take some of that housing. So there is certain inflexibility in the state mandates. …

The story of Rio Vista is very similar to the story of Oakley. It was a community that was ag based and natural gas… both of them disappeared in the 1980s so the decision was made then to aggressively annex land that otherwise would never have been annexed to help with the fiscal situation. But that land was not developed and it is only developing now – 15 years later.

GORDON: I think there is a real need for a statewide perspective on recreation as well. The Central Valley vision is to look at "the other California." It needs more resources to maintain open space and the quality of life. We really are concerned that there is decreasing opportunity for kids to have a connection with the outdoors – "nature deficit disorder." We want to plan ahead because this area is growing so rapidly and if we don't plan now we are going to find ourselves in the same place as we did in L.A.

The Delta Protection Commission is a miracle of political economy. Considering their staffing and support, they have accomplished far more proportionally than any other entity. It has provided focus and identity to the Delta and political empowerment to the locals.

– Mike Eaton, The Nature Conservancy

The Delta has a real sense of place. That's what we want to help preserve. People want access to water: boat docks, kayaking and fishing, camping opportunities. … We need to draw on a lot of entities and plan now to determine all the different activities wanted/needed by a diverse population and plan for funding. We're trying to

have a plan in place so we can get funding and preserve the history and the culture of the Delta.

JOHNSTON: Mike, is there too much development for the projects you're involved in for the Nature Conservancy?

EATON: What I see is a common theme in how we treat the Delta – avoidance. The infrastructure was designed for 100-year ago traffic levels – the highways rely on what by today's standards are one lane bridges. There are levee roads that are unexpandable. There is an unacceptable seismic risk. The Delta portions of the six counties are the poor stepchildren of different marriages. There is no effective cumulative assessment of the issues. If we had one, it would lead us to a moratorium to avoid a Katrina-like disaster. We need to deal first with the negative things we are doing and then consider what we should do now.

HODGKINS: Accommodating people is the real issue. In my simple engineering view, these are minor problems compared with potentially not delivering water to 20 million people. The levees are extremely fragile. They were designed to wash out the hydraulic mining debris. They did that. Now [the flow and design] is washing out the levees. One of the worst issues is boat wakes. It costs $5,000 to $10,000 a foot to rock [rip rap] a levee trying to avoid an environmental problem. There are 1,600 miles of project levees.

The Delta has a real sense of place. That's what we want to help preserve.

– Nina Gordon, California Department of Parks and Recreation

In one instance, the guard rail built to protect people from going off the levee road made it impossible for the local reclamation district to maintain the levee. I don't know how we get our heads wrapped around this thing. In Sacramento, there are two very successful collaborative processes, including the Sacramento Water Forum. It took them seven years to get together on common issues and talk about how to address those issues and meet the important interests of each stakeholder. It takes so long to get everyone to recognize a common problem and each other's interests. But the time we're able to do that, Jeff Mount's prediction for the Delta comes true.

JOHNSTON: What about the Reclamation Board's permitting authority for levee improvements designed to protect new development. What standard to you apply to a levee in order to approve [a project]?

HODGKINS: I am speaking for myself, not the board as a whole. The board has no land use authority. But we don't approve a project that will put someone at significant risk with the flood control system. The levee system, with possible exception of the Delta, is a system. Whatever you do at the upper end puts more pressure on the levees downstream whatever you do at the lower end of the system raises the water level and puts more pressure upstream. It's very difficult to make progress when we don't have the money to fix the whole system all at once. The other standard is we would not allow a project to go forward if in our opinion it is putting more people at risk.

Regarding Stewart Tract, which is on the board's agenda at next meeting, the proposal for the River Islands development is that the width of the levees would be widened to 300 feet. The slope on the landside top of the levee to the center of the island is being sloped down, I believe, an 8 percent grade. Is it safe for homes from a flood control standard…? From an engineering standpoint, yes it is. The levees would be high enough to protect from failures from upstream levees in the Delta. From a public safety standpoint, it meets every standard an engineer would say it needs to to work.

JOHNSTON: Asked about Assemblymember Dave Jones' legislation requiring 200-year flood protection…

HODGKINS: I don't think we should put numbers on it. Folsom Dam's estimated protection went from 350 years or 500 years at the time it was constructed to 50 years today. The change came about because of the change in the hydrologic record. There are bigger and bigger floods. Specific numbers provide a false sense of security that if you live behind a levee you won't be flooded. People will experience natural disasters, earthquakes, etc. There is no risk-free area to live.

JOHNSTON: Having said all that… isn't 200-year protection better than 100-year protection?

HODGKINS: Absolutely. But the term makes people think there is a not a chance for a flood except once every 200 years.

EATON: Does the Reclamation Board have the authority to consider sea level rise?

HODGKINS: No.

Eaton: I hope the Board seeks that authority because Alice in Wonderland is like the Stewart Tract.

HODGKINS: In the case of Stewart Tract, by my standards and in my opinion, it is relatively easy to raise levees three or more feet if necessary [to accommodate sea level rise]. We should work with the Parks Department to acquire the land to hold in reserve to deal with climate change. But the Sacramento Valley farmers would run you out of town on a rail.

JOHNSTON: Recounted the history of plans to build River Islands and expressed concern about a possible domino effect.

HODGKINS: My career has been a career of constructing infrastructure. My job is to do what is necessary to move a project forward. I'm an engineer. We elect people to set the policy.

COGLIANESE: The post-Katrina discussions point out that the institutional infrastructure failed as much of the levees. Institutions failed to plan and communicate, to think far enough ahead and then act on that for people to be safe. We're looking at the same problems in the Delta. There is no plan to rescue people in the Delta. We need to establish some common ground. The specter of flooding may be able to help us create an emergency response.

Top-down is not politically viable. There is not much experience in creating institutions that can survive political changes. A network of networks is needed to see issues of land use, transportation and emergency preparedness and establish linkages of the San Joaquin, Sacramento and Bay Area Councils of Governments. There is a huge divide between natural resource planning and land use decisions/urban planning.

JOHNSTON: The question is how to maintain expertise. Mike, what is your view on who gives the direction?

EATON: Oversight involves different frames of relevance for different issues. Hydrologically, the system from Chico to Firebaugh is connected. We need to recognize as we take away flood protection downstream, the effects are felt upstream.

JOHNSTON: Asked about how to maintain open space and parks.

Gordon: The process is as important as the product. The valley is growing so quickly and people turn to the Delta for recreation. We need to plan ahead for that and retain the culture.

JOHNSTON: Butch, the governor recently announced an emergency response declaration to help speed up some levee repairs. Should the governor use all his powers and bully pulpit to say "levees must be safer and [we should] not do anything that makes it worse"?

Accommodating people is the real issue. In my simple engineering view, these are minor problems compared with potentially not delivering water to 20 million people.

– Butch Hodgkins, State Reclamation Board

HODGKINS: What the governor did was gutsy considering how bad the system is with eroded areas. But the use of that power has to be done with careful judgment to be effective. There are degrees of risk and tradeoff in providing for the greatest public good.

JOHNSTON: David, is planning enough? Do we need enforcement?

SHABAZIAN: Planning is not enough. That's the easy part. Implementation is the difficult part and requires champions. Visions should change with new information; but, we also need to stay on task. •

Delta Ecosystems:

Healthy Ecosystems and Competing Uses

Panelists:

BANKY CURTIS, *Deputy Director, California Department of Fish and Game*
DAVE FULLERTON, *Principal Resource Specialist, MWD of Southern California*
JONAS MINTON, *Water Policy Advisor, Planning and Conservation League*
SPRECK ROSEKRANS, *Senior Water Analyst, Environmental Defense*
RUDY ROSEN, *Director, Western Regional Office, Ducks Unlimited*
Moderator: **JANE WOLFF**, *Assistant Professor of Architecture, Washington University in Saint Louis, and Author, Delta Primer: A Field Guide to the California Delta*

JANE WOLFF: Ecosystem management involves understanding the complexities of landscapes; the Delta is more than a collection of projects and interests.

Focusing on exports vs. growth control masks the bigger issues of invasive species and the massive and permanent loss of habitat.

– David Fullerton, MWD

Historically, the value of the Delta was often obscured by the nature of the swamps and marshes themselves, which are difficult to get through and hard to define. The region was totally redefined. Currently, there is scientific awareness of the importance of wetlands ecosystems and greater cultural awareness of ecological functions. Interactions between natural and social factors have changed, and will continue to change, the landscape.

DAVE FULLERTON: Ecosystem restoration objectives and priorities include: native species thriving in the Delta; protection of endangered, recreational and commercial species; and consideration of protection now and into the future. Restoration involves the natural and sustainable reproduction of a number of species. The Endangered Species Act provides a measure of last resort.

Broader ecological views of restoration will consider the current status of the ecosystem and how we can make it work. The system can't function in all the ways that everyone wants; priorities will set the goals that guide actions.

Urbanization constrains what we can do. Restoration issues include water quality, water project operations and invasive species. Focusing on exports vs. growth control masks the bigger issues of invasive species and the massive and permanent loss of habitat. Inundation will create 20 foot embayments that provide poorer habitat than existing agricultural operations. Pesticides issues are also overlooked.

Philosophy and science are often blended, as embedded philosophical values get expressed in scientific terms. Vague terms are used that everyone can agree to, e.g. ecosystem. When push comes to shove, what are the basic beliefs about what people are willing to give up? A holistic ecosystem approach is better than using the ESA [Endangered Species Act], which is "cracking the whip."

We all support ecosystem management but in real life we never agree on what it means. Does it mean converting farmland habitat or shutting down exports? It will be a political solution or there won't be a solution. The political process is ugly but it's how things get done. The entire Delta is totally managed and will remain that way.

RUDY ROSEN: Ecosystems are connected to everything and always changing. For migratory birds, impacts from

the loss of Central Valley wetlands have been minimized by grain farming. One-fifth of northern California waterfowl population winters in the Delta. What happens if agriculture changes? Fowl could run out of food in 6 to 8 weeks. How much is enough for what? What are limiting factors? Acreage goals need to be determined for restoration, water and agriculture. It's not clear that diverse interests in restoration are working together.

JONAS MINTON: "Flood – you say it like it's a bad thing." Decisions are made every day that affect ecosystem – most are development driven. How do we adapt to that? Restoration involves identifying the actions needed to create a different, sustainable ecosystem. The Delta Vision process can provide the venue for that discussion. The question has to be asked, what are the actions that can be taken to restore something that is not the same as it was 100 years ago? Nor will it be the same 100 years from now?

An acre-foot is very easy to quantify but what is a healthy fishery? The "hard questions" we put off while [diversions] cfs [cubic feet per second], acre-feet go up.

Science often focuses on what can be measured and quantified; we ought to be looking at the outputs we're seeking. What's a healthy fishery? What are the changes that we're seeking for the Delta? We need to be real about difficult matters.

The visioning process should not start with identifying solutions, it should look at uncertainties – that's what we need to understand. The timeline doesn't permit solutions; it does allow us to look at short-term ecosystem crashes and projects that are currently before agencies. There are things that can be done today to improve the situation; many organizations are involved with that now. Adaptive management has the potential to be the biggest threat to the ecosystem. There have been winners and losers. Water quality and levees have been losers by any stretch of the imagination.

What happens when you factor sea level rise? Delta vision needs to start with people not bringing answers to the table.

SPRECK ROSEKRANS: Being a part of the natural world means different things for different people. Restoration in the Delta precludes development. Developing in floodplains and then seeking insurance is not wise. The level of scientific understanding about invasive species, pesticides and pump operations is promising. Water management needs to be better addressed: more and better groundwater management and a better water transfer market to ensure that water is more efficiently used. The ESA [Endangered Species Act] is a great last resort for management. There may be some problems with it but it is a great tool.

Lack of unity on technical considerations is a challenge. Some technical considerations need unity to help solve. Are the answers that science comes up with answers that can be used? We need to move forward, even without certainty. The correlation between exports and fisheries needs to be comprehensively looked at to try and get agreement on the science. Then we can debate policies.

Profits often drive decisions, with costs transferred to others. It's less expensive to make sure that damage is prevented now. We need to get our economic signals right. We need to understand the causes of decline and find a fair way to distribute costs of restoration [user/beneficiary pays]. Building in the Delta is a permanent commitment; it needs to be a component of a long-term plan.

The visioning process should not start with identifying solutions, it should look at uncertainties – that's what we need to understand.

– Jonas Minton, Planning and Conservation League

Decisions and funding are based on science and legislation; it all influences what we do. The enforcement of flexible water has been disappointing. The solutions will be socially and politically constructed, if not by us then by the legislature and courts. A political coalition can be created around a vision of the Delta. It comes down to what people are willing to pay for and what people want to see.

BANKY CURTIS: Lack of unity is an underlying concern. Agreement is needed on where to invest, on science and on goals. Moving forward without certainty requires that we continually adapt. Adaptive management cannot put off the hard choices. Water quality and levees have been overlooked to date. Tying environmental water to budgetary funding is not working in providing environmental water resources. The Delta is totally managed and will remain that way.

Regarding funding, everybody has to pay in one way or another. Some problems, such as invasive species and mining legacy problems don't have a responsible party. Everyone needs to decide together on that the right proportions are for who pays. Everybody needs to be involved in determining ecological standards and how those fit with water exports. We need a system that will last a long time. What can people live with, on a long-term basis? The people who can really decide are here in this room. It's us.

A political coalition can be created around a vision of the Delta. It comes down to what people are willing to pay for and what people want to see.

– Spreck Rosekrans, Environmental Defense

We need to make choices while balancing as many interests as possible, on some issues the state may need to take the lead. Collaboration takes time to develop trust and unity that result in solutions that most of us can live with. We have to find a solution – the Delta is too essential to all of us. •

Delta Water Supply:

Water Supply and Quality Sustainability

Panelists:

Celeste Cantú, *Executive Director, State Water Resources Control Board*
Greg Gartrell, *Assistant General Manager, Contra Costa Water District*
William J. "B.J." Miller, *Consulting Engineer*
Barry Nelson, *Senior Policy Analyst, Natural Resources Defense Council*
Tom Zuckerman, *Member, Bay-Delta Public Advisory Committee*
Moderator: **Pankaj Parekh**, *Director of Water Quality Compliance, Los Angeles Department of Water and Power*

Pankaj Parekh: Discussed how Delta water quality seems to be the losing part of the equation in Delta water management. We have created a system today where salinity during certain times of the year is different than with the natural system. How confident are you that this can be controlled?

Celeste Cantú: The question is to what end are we managing salinity. We need to be careful not to think that salinity is the only thing we need to worry about. We can affect salinity and we have affected salinity to date, but we need to determine to what end we are managing it for. Ag, of course, drinking water, of course. Some people think there is more salinity because of [export] pumping, but actually there was more salinity in the Delta [historically] than when we decided to manipulate the system and make the water our own.

The State Water Resources Control Board says salinity should be this number at this time. It's really bizarre. They don't call it the Delta for nothing. It's constantly changing with the tidal influence and others. Salinity management means picking a beneficial use we want to protect. Then we pick a time of year and we pick a point to measure. And we decide what the standard should be and then we ask people to work real hard to see if they can hit it. Clearly they can affect salinity. The question is can we manage it for everyone's successes? Not sure we could ever do that over a long term. We need to look beyond the ability to hit that one point and consider everything that is going on.

Greg Gartrell: We live in a unique situation – we're in a drought every year from May or June and it ends in December when the rain starts. Water management in the state is management of that drought. Then there are the extended droughts with little rainfall in the wet periods for a number of years. We need to deal with mythology. It's partly true the Delta used to be saltier but only in the very dry years. Before the projects, it was a lot wetter and less salty in the Delta in most years in the fall. Records show that at their outtake. For the future, we can't control but one thing is we will continue to have annual drought cycle and manage for that salinity and react to that. If we can't maintain a Delta that's fresh then we're in a serious situation; water agencies will go to membranes, and agriculture will have to find another way to sustain itself. The challenge looking forward is how to best manage that.

We live in a unique situation – we're in a drought every year from May or June and it ends in December when the rain starts. Water management in the state is management of that drought.

– Greg Gartrell, Contra Costa WD

TOM ZUCKERMAN: The Delta is quite a bit saltier today in the spring and early summer than it was historically. Before damming the rivers, runoff would occur in the spring even in the dry years. In dry years there was increased salinity in June and August but many years there was no salinity intrusion in the Delta at all, until the exports began and the rivers were dammed. Federal CVP [Central Valley Project] and SWP [State Water Project] deliver water in the spring and summer that might be saltier than nature, degrading the San Joaquin River. It's not that the Delta is necessarily less salty or more salty – it depends on the time of year.

As part of the Delta Vision Process we need to have an honest conversation about the options on the table – from changes in plumbing, the peripheral canal, to changes in land use.

– Barry Nelson, Save San Francisco Bay Association

CANTÚ: The point I'm trying to make is that it is a very dynamic process. Salinity varies depending on seasons, depending on flows. It changes a lot. It's not a static number at all.

PAREKH: Do you have some confidence salinity can be solved in the Delta?

ZUCKERMAN: I have some confidence. The thing to solve the problem is less reliance on the Delta in dry years when there's not enough water to go around. Southern California is doing so much – not to say they can't do more – but to reduce reliance on the Delta in drier years gives me some confidence it will work its way out.

BARRY NELSON: It's difficult in the Delta to separate water quality issues from ecosystem issues from water supply issues. Yes, we can control salinity in the short term. No, we can't control it in the long term. In the short term in the summer, fall and early winter the salt is controlled by water project operations, period. David on the last panel said that environmentalists always wind up coming back to acre-feet, but estuaries are estuaries, defined by the freshwater that flows into them. We have to find a way to properly manage the flows, the water quality, the habitat and the ecosystem. We don't have a choice. In the short term, if we want to control the salinity in a different way we have the ability to do that. But, there is no long-term strategy for controlling salinity especially when we are told to expect a sea level rise of 3 feet or more due to global warming. The worst case scenario could be worse. Do we have a strategy to address the Delta in the advent of a sea level rise? Absolutely not. One reason we need Delta Vision process is to address that.

In the short term, NRDC [Natural Resources Defense Council] and the other conservation groups have recommended that we manage the Delta differently this year based on what we have learned through science. The conclusion is that we're not managing the Delta properly. We are overemphasizing exports in the system and that's having a negative impact on water quality in the system, fish and encouraging the spread of invasive species. Can we control the Delta in the short term? Yes, but do it differently. In the long term? One mistake is assuming the Delta levee system is stable. No one has really disputed the possibility of a catastrophic levee failure. We need to get much more serious about maintaining Delta levees than we have.

B.J. MILLER: Studies that they have done analyzed these data have been unable to find any important effect of Delta exports on the fish. I agree with Barry on the two types of salinity intrusion, long term with sea level and [short term with] catastrophic levee failure. The nature of the earthquake problem is not being fully appreciated. Farming caused the peat soils to subside. The levee problems are not just animal holes. It's the fact that many levees are made of or are resting on liquefiable soils. No one is talking about replacing that soil. If you wanted to put $900 million in levee maintenance that's great for run-of-the mill levee failures but the problem of the liquefiable soils can't be solved no matter how much money is spent.

PAREKH: What is your opinion about the use of total organic carbon, bromide and salinity as surrogates for monitoring and improving Delta water quality? Do you think that the targets in CALFED record of decision for bromide are achievable?

CANTÚ: We already measure for chloride. I don't think measuring for bromide is going to get us anywhere new. I don't see the value to focus on bromide. As long as we have agriculture, and agriculture is very, very important, we're going to have total organic carbon (TOC) coming into the system. It has a really major affect. We can monitor that all we want but we already understand this issue. We know what the effect is and we know that

farming does add TOC. Talking about individual constituents like we do misses the point: those are important things to monitor for, and we should continue to monitor them, but the fact is we have an incredibly manipulated system. Tweaking this or that will not address the whole story.

GARTRELL: I agree they are good parameters to tell us how we're doing. But they're not the whole story, for example, for aquatic species that live in the Delta. The parameters for drinking water quality give us important measures of how we're doing. Can we meet those? We're not going to meet a lot of the goals if we continue doing things the way we've always done them. Farming in the Delta in the way it's been done in the last 100 years is not sustainable. We need to stop subsidence and do things in different ways to sustain agriculture, water quality and water supply.

MILLER: The guidelines can't be met by water exported from the Delta, but the urban agencies can treat the water and meet those standards. But the other problem is as more people live in the Delta, in Stockton and on the eastern edge of the Delta, all of their wastewater will go into the river upstream of the pumps' intake. What's in the water and do the urban agencies have the capability to treat the water to take out pharmaceutical byproducts? All things being equal, I would not want to take my water supply for 27 million people from the bottom of the system. We should take water from the best available source for public health.

NELSON: Urbanization is tremendously important. I think that as a state we owe people who move into homes the confidence that their state has assured them that they are not at significant risk of flooding. Right now we can't say that. Urbanization also is problem for future of ag, ecosystem and water supply. It's about more than water supply and water management. Secondary zone development affects water quality. But we think we need to get those water quality problems under control. As part of the Delta Vision Process we need to have an honest conversation about the options on the table – from changes in plumbing, the peripheral canal, to changes in land use.

PAREKH: Are you suggesting we need other surrogates? What would they be?

NELSON: We first need to make sure we're clear about what we are improving water quality for. The ecosystem for example, there are repercussions for things like pesticide use and the problems with the delta fish. Pyrethroid pesticides may become one of those surrogates we need to monitor for.

ZUCKERMAN: The solution is not to abandon water quality in the Delta in favor of diversions upstream and not worry about what happens when people are forced to rely on water from the Delta. We need to work together and find ways where we don't pollute our water or over-export water from our system so that chloride and bromide do not become a problem. Total organic carbon is not just agriculture – it is a result of natural conditions, the breakdown of natural materials, and other sources such as sewage plants and wildlife refuges. We need to find answers that don't sacrifice one area for another.

QUESTION FROM THE AUDIENCE: Why can't we just turn the pumps off in the Delta for two years to restore the Delta ecosystem?

MILLER: You could do that. It's just money. There's a reasonably good chance that will happen anyway.

NELSON: Water project operations drive all the water management decisions in the Central Valley. We diverted more water from the Delta system last year than we ever did. It was also the all-time low for some Delta fisheries when we would have thought the fish would do OK because it was a wet year. Water project operations are having a profound affect on the ecosystem. Over the long term, the state of California needs to reduce its dependence on the Delta for water supply not just for the health of the Delta. Can we simply turn them off? Can we do that next year? No. But is it technically feasible to reduce our reliance on them, yes. We have seen the same patterns in California. Water users said they couldn't survive with less water from the Trinity River, from the Klamath River, from the American River, from the Mono Lake tributaries… and in every one of those cases water users have been able to reduce the amount of water and survived. The Bay-Delta is no different.

As long as we have agriculture, and agriculture is very, very important, we're going to have total organic carbon coming into the system. …We can monitor that all we want but we already understand this issue.

– Celeste Cantú, SWRCB

QUESTION FROM THE AUDIENCE: What would happen to the health of the Delta if we shut the pumps off?

NELSON: Right now we manage the pumps and the system as a whole for water supply. If we manage the system solely for ecosystem health, we would have a much healthier ecosystem than we do now. We can clearly strike a better balance and we can do that this year with the proposal we gave the agencies this year. The tools are on the table…

GARTRELL: Information has not indicated exports are causing the problems. It has indicated that it is [water project] operations, but not just the exports. It is also caused by the dams and consumptive uses up the valley along all the rivers. If we just turned off the export pumps, the south Delta would be all agriculture drainage. Very complex problem.

All things being equal, I would not want to take my water supply for 27 million people from the bottom of the system. We should take water from the best available source for public health.

– B.J. Miller, Consulting Engineer

NELSON: I agree that it is not simply exports. It's the management of the entire water system. But the pumps do have some very big impacts; they directly kill fish. The state and federal pumps are the biggest factor.

MILLER: We've spent $50 million a year to curtail exports on the smelt since 1997. Now if there's an effect, somebody, with all the data we have, someone would have been able to find a correlation between these pumps and the number of fish.

ZUCKERMAN: I respectfully disagree with B.J. It's true that it is not just because of the SWP and CVP pumps that the fish populations have declined. It's the decrease in Delta inflow and the increase in Delta outflow in the driest years where it's having a horrible impact on most of the fish in the Delta. The point is we're sitting here today with water quality in the San Joaquin River at Vernalis better than water quality at Hood in the Sacramento River. The situation changes from year to year. In abundant years, there is little demand for exports. We need to work it out so we're not putting all this stress on the Delta when the system has all this need for water.

PAREKH: Who are the real stakeholders for water quality improvement in the Delta? And do you believe their interests are understood and represented in the Delta vision process.

CANTÚ: If big interests mean people with big pocketbooks their interests are well understood. But there are many, many stakeholders and that's what makes the Delta so interesting. Some of the stakeholders have little pockets. Others like fish have no pockets at all. It's very complex. Everything is connected to everything else. You can't say "if we just change this it will all be better."

PAREKH: You have seen a lot of different forums and workgroups trying to discuss the issue of water quality representative of stakeholders in the process, such as your example with the fish. Are you also suggesting that we need to reexamine the traditional representation we've had? The forums that have been convened to discuss water quality issues? Do we need a better representation of different groups?

CANTÚ: We do a good job with all the groups in the venue. The question is: how loud are the voices? How well do you listen to the smallest voices? Consensus is generally who is the most powerful, economic or political. In general, economic. I think if we're sucked into an economic definition of solving this problem water quality there will be losers and all of California will be losers. We need to be careful not to do that. Find the voices and listen to the voices across the spectrum.

GARTRELL: The stakeholders are the 23 million Californians who rely on Delta water, 300 million in the United States who are paying through taxes in some way for ecosystem restoration. The problem we all have to solve, the real problem, is there's a small group that can tell you about what's going on in the Delta. But you ask most people and they have no clue where their water comes from. Most of the stakeholders are not really engaged. As long as they get water in the morning to take a shower, they don't care.

MILLER: You have the right stakeholders. But I'm not a big fan of consensus. All those CALFED meetings. But in the final analysis, they made a deal. And that's the way you get things done. What this process ought to be doing is trying to get a clear statement of the interests of stakeholders, not the positions of the interests. And second, I think this process would serve California well

if it can just reach consensus on the facts – not what the solution is. The idea that you're going to come up with a plan for the Delta by consensus is just nonsense.

NELSON: The obvious group of stakeholders is the people who drink water, who eat fish; the residents of the Delta communities are obvious stakeholders. If you're just looking to solve the export problem, then you just look for the best quality water. But if you're trying to solve the broader water quality issues, ecosystem, agriculture, etc. it's a more complicated problem. It's not a simple problem but it's one we absolutely have solutions to.

PAREKH: But do you believe we have all the stakeholders represented?

NELSON: I think the Delta community has been disproportionally unrepresented in processes like CALFED that tend to have the environmentalist seat, the fishing seat and a host of agency and water quality seats.

ZUCKERMAN: In the late 1950s and early 1960s solemn promises were made to northern California that only surplus water would be exported. Many of us have spent our entire career trying to get people to honor that. I think we owe some special deference to the people who are where the water comes from. And respect the safe yield of the Delta for when and where the water is available. We resent the hell out of it when people demand water to drink. That's what this conference is about, that's what the University of the Pacific is trying to do: provide an intelligent forum for people to come together to discuss these issues.

QUESTION FROM THE AUDIENCE: If modern drinking water treatment is so good and meets the standards, why are utilities so concerned about source water quality?

GARTRELL: Because [treatment] is not 100 percent reliable. If you just rely on the treatment process, you will fail now and then. You need to protect yourself at every level – including what is being discharged in the water upstream.

PAREKH: Asked the panelists to sum up their thoughts

CANTÚ: It's been said that we live in exciting times and the Delta poses challenges to us that need to be looked at in a positive way. We also need to keep our minds open that we don't know all the answers.

GARTRELL: One thing to take away from this panel is that no matter how much is said about this problem, the problem still remains of the continued conflict of push and pull between water supply, water quality, the environment, levees, etc.

MILLER: It seems to me that one way or the other we're going to end up with a Delta that is primarily devoted to wildlife habitat and recreation – maybe the only thing. What we're talking about is whether we get there in some orderly, defined way or because of some catastrophic disaster, or the slow rise of sea level.

NELSON: What should we be doing to address these issues? The first is to recognize that the future Delta tied to climate change and tackle that problem. Second, an increase in self reliance and reduce Delta diversions, and that includes more than just the pumps. The third thing is tackling urbanization and dealing with the flood risks and water quality concerns. Finally, those things have to come together in the Delta vision process if we're going to succeed. The real question is whether we're gong to let the status quo make decisions for us or whether we're going to tackle these problems in a way that's effective and that we have some control over them.

The solution is not to abandon water quality in the Delta in favor of diversions upstream and not worry about what happens when people are forced to rely on water from the Delta. … We need to find answers that don't sacrifice one area for another.

– Tom Zuckerman, Bay Delta Public Advisory Committee

ZUCKERMAN: The way we're going to solve the problems is by thanking the people who made time in their busy schedules to come here. The solution is sitting here in the seats. •

Delta Infrastructure:

Transportation, Utilities and Water Conveyance

Panelists:

Kome Ajise, *District Director, CalTrans District 10*
Dana Cowell, *Deputy Director, San Joaquin Council of Governments*
Randy Kanouse, *Special Assistant to the General Manager, East Bay Municipal Utility District*
Clyde McDonald, *Consultant, Assemblymember John Laird*
Dante Nomellini, *Attorney, Nomellini, Grilli, McDaniels*
Waymon Pon, *Manager, Station Operations, Gas Transmission and Distribution, PG&E*
Moderator: **Tom Zuckerman**, *Member, Bay-Delta Public Advisory Committee*

Tom Zuckerman: What we're trying to do here is begin to identify interests that have not traditionally been players in discussions of the future of the Delta. The invisible infrastructure and how important it is not just to the Delta but all over. Describe what infrastructure you are here to talk about today and why it is important to the people of this state.

There is growing recognition that we need to pay attention to the kind of issues that are out there and we need to take a look at the long-term issues. … We shouldn't be making decisions by disaster. We need to plan ahead.

– Clyde McDonald, Assembly Consultant

Kome Ajise: CalTrans has some relatively small highways that go through the Delta that are very important. About 80 miles of highway. In addition to the thoroughfares of Interstate 5 and Highway 99, CalTrans is responsible for Highways 4, 12 and 160. They have an average daily traffic load of 11,000 to 15,000 vehicles, with 7 to 10 percent consisting of trucks. For every mile of state highway that's about 5 acres of land because that is the average width of the right of way. Highways 4 and 12 are actually sitting on the levees and some sections are on peat soils.

Dana Cowell: The San Joaquin Council of Governments has a very strong partnership with CalTrans, working together on projects and funding. The council administers the half-cent sales tax, makes transportation investment decisions and is responsible for developing the multi-species habitat conservation plan in San Joaquin County. Multiple interest points in the Delta. We have a vital interest in what happens with Highways 4 and 12. We have a lot of interest in what happens in the Delta but a lot of the folks on those routes are using it as a way to get through and to another place rather than into the Delta itself. Those routes are under a lot of pressure. New traffic is picking up. They often serve as reliever routes for the Bay Area highways to Sacramento. There is a very important railroad corridor that runs through the Delta. Amtrak has four roundtrip trains a day. There also is a lot of freight traffic with increased traffic and train traffic in and out of the Port of Oakland. Also, the Port of Stockton is the fourth largest in California. It's increasing in use for trade and commerce.

Randy Kanouse: East Bay Municipal Utility District has a keen interest in the vitality of the Delta. It serves 1.3 million residents of Alameda and Contra Costa counties. Our primary water source is the Mokelumne and about 15 miles of the aqueduct traverse the Delta. About 10 miles is above ground and that is the portion of our aqueduct that is particularly vulnerable to the myriad

failures and catastrophes that we've been talking about that can occur and have occurred. EBMUD has contributed about $1.8 million to date to the reclamation districts where our aqueduct traverses their lands. As a property owner and an entity concerned about protecting that levee system, the district also has interest in the Delta with regard to the ecosystem. The district is responsible for the health of Mokelumne fisheries, which empties into the San Joaquin River just upstream of the Delta so our programs are directly affected and related to what is happening in the Delta.

ZUCKERMAN: Please give us some indication of how important you feel the Delta levees are to our future and the protection of the cities.

DANTE NOMELLINI: I represent a number of reclamation district levees in the Delta that protect urban areas, the utilities, viable agricultural operations, recreation and habitat. Habitat is totally devastated when there is a levee failure. A big problem that occurs here in establishing a vision is how we define the Delta. The Delta as defined in the water code is 760,000 acres. It includes Tracy, Interstate 5, West Sacramento, etc. so we have a much broader definition for the Delta in the water code and we have a bunch of speakers talking about parts of the Delta.

The interrelationship is important because the fringe of the Delta, an urban district, for example, that district's levee system becomes more vulnerable if an adjacent agricultural district levee fails. A break also can affect the levee on the other side of the island because of the wave action. If we have a sea level rise, the water level, which already is affected by the daily tides, is going to get much higher. The fate of the Delta is critically important to protection of all these resources and tremendous investments. A lot of people talk about throwing away the canals, the railroads, etc., which I think is absolutely insane. The practical objective is to attempt to address the challenges we're going to have in the future from sea level rise or an earthquake. … To say we shouldn't fix a levee because of an agricultural operation on peat soil… Then let's take that peat soil and change the use, make it into a wetland or something. Peat soil is not in all parts of the Delta; subsidence is not continual. We really have to think seriously about the detail about what we're talking about.

It's the same as the peripheral canal debate – the Delta is doomed. This scenario doesn't lead in that direction. If you are worried about catastrophic failure of the Delta, then that rivets your attention to continue to make this important area self-sufficient. Regarding the contaminants, fresh water is the solution to pollution. You need flushing flows in the river and Delta to sustain life in the future. You need to live up to the promise that only surplus water comes from the Delta and that the Delta is the common pool for exporters. Without a common pool no exporters will care about the Delta.

WAYMON PON: PG&E has a vast network of infrastructure that traverse the Delta. The most significant infrastructure at risk is our underground gas storage facility at MacDonald Island. It plays a key role in reliability and supplies approximately 25 percent of the winter gas supply; on a peak winter day it can provide as much as one-third of the supply to our service area. If that storage facility goes out of service, there would be significant issues with the loss. Economic analysis estimates about $200 million dollars to $1 billion of impact if the facility were to go out of service, depending on what type of winter. The area is prone to flooding. It flooded in 1982. The facility is built on an elevated platform so it would be able to continue operations in some instances. Currently, we have one pipeline off that island that connects this facility to users. Construction of a second pipeline will start in the next couple months. It will provide a second feed if the other pipeline for some reason is unable to operate.

A lot of people talk about throwing away the canals, the railroads, etc., which I think is absolutely insane. The practical objective is to attempt to address the challenges we're going to have in the future from sea level rise or an earthquake.

– Dante Nomellini, Attorney

CLYDE MCDONALD: These remarks are mine and don't represent the Legislature or my boss. I've worked on lots of resource issues in the Legislature. Most of what I've done on water resources, and most recently on levees. Up until two years ago there wasn't much interest in the long-term health of the Delta. People looked at it as a static situation. There were no significant investments in levees, more or less just sort of ignoring some of the challenges you heard about today. There really has been

a dramatic change in people's outlook instead of seeing the Delta as something static, people are starting to say there are some big hydrologic and geologic forces and we need to start paying attention to this. We can't just let the kind of Jones Tract and Katrina events define the future.

It's a lot cheaper and causes much less destruction if you make your investments early and ahead of time. The Legislature has started looking at this and passed a bill earlier this year, AB 140, a $3 billion bond for levees. Most of it would be spent in the Central Valley. There's also the Caves initiative, which has $275 million for the Delta. There is growing recognition that we need to pay attention to the kind of issues that are out there and we need to take a look at the long-term issues. With respect to the exports, they export 5 to 6 million acre-feet of water from the Delta each year. To have that disrupted by a catastrophic event would make Katrina look small. That's half the water supply for the Silicon Valley and a big chunk of water for the San Joaquin Valley and for southern California. We shouldn't be making decisions by disaster. We need to plan ahead.

It's collectively important for the various councils of government to consider what our collective goals are and how our own blueprint for development affects the Delta and how we should be working together.

– Dana Cowell, San Joaquin Council of Governments

Zuckerman: There are many things other than water and ecosystem depending on the Delta. How should the interests you represent be involved in the Delta Vision process?

Ajise: CalTrans has to be involved. CalTrans is part of the Delta. We need to get some attention on the Delta and build some collaborative forces. We want to be part of that.

Kanouse: We've had a very complex relationship with the Delta and the CALFED program… We divert upstream of the Delta. And we have infrastructure that runs across the Delta and we have a fishery that must go through the Delta as part of its life cycle. Figuring out our role in CALFED has not been simple. The CALFED program and the major stakeholders early-on defined too narrowly the stakeholder interests to include at the table. They needed more attention from business, recreation – all of those things other than using water that moved through the Delta. We hope to define future of the Delta far more broadly and to ensure that the community interests here are active participants.

Recently, when the state began to try to figure out how to pay for the CALFED program, that was the point at which everybody became a beneficiary. For us, and I think for many, there was a big disconnect between a small group of interests making the decisions about how much and where to invest and then a whole lot of other interests being told you get to pay for the program. We hope that mistake is not repeated.

Zuckerman: Someone talked earlier about getting all the COGs together to discuss transportation and all these other issues. Do you think there's some problem [with lack of coordination] and how could that be fixed?

Cowell: I do think it makes some sense. It's collectively important for the various councils of government [ABAG, SJCOG, SACOG] to consider what our collective goals are and how our own blueprint for development affects the Delta and how we should be working together. Collaboration would be useful, particularly in the secondary zone. We are at different points in this process; some are farther ahead to determine their blueprint. Collaboration is essential for us since so much of the Delta is located in San Joaquin County.

Zuckerman: That being the case, what kind of state involvement do you think should be included in concern with flood control decisions?

Cowell: Our agency has no jurisdiction over flood control. Also no direct land use authority. However, we can maybe help to develop a process to make our land use more compact, to value our open space and protect areas important for habitat, open space, etc. From the point of view of transportation, some strategic decisions need to be made. A number of the bridges are getting near the end of their design life. When we make decisions about what we're going to do with those bridges and deal with the capacity of [traffic] demand across the Delta – those have larger implications for what else we're thinking of for the future of the Delta.

Nomellini: Obviously, landowners have an interest in all decisions. CALFED was just a mechanism to justify increased water exports and the levees were pretty much

ignored. Certain players relative to the landowners are limited; the primary zone is all ag, but ag is limited in its ability to pay. To the extent we believe we need greater levee protection, and I think we all agree on that, others are going to need to pay. …

If we think in terms of whether or not we want to take portions of the Delta and turn them over to the state, the state is a big landowner in the Delta. But it has not proven to be a good manager of the property. When budgets get tight, they have to save personnel and they sacrifice what happens with their land resources. The federal government does not pay assessments to reclamation districts because it's seen as a tax. All the levee systems in the state we're not going to end up 100 percent protection. So we need good emergency response. Consider barriers at Carquinez Strait if the sea level rises more than 3 feet. Those have been studied. … I think we have to go slow, keep our heads, keep plowing ahead, let's do some solid planning, let's not panic, let's keep going.

PON: Agree that we are key players. I look at it as a three-legged stool. The utility infrastructure has had a major impact… If we're not involved in the decision process you lose that leg of the stool. Emergency response is a key area that PG& E focuses on and needs to be involved in decisions made about the levees. We have thousands of employees and we could mobilize quickly to address any emergency situation.

KANOUSE: Just one more comment. The good news is that after 20-some-odd years, we have a governor who is absolutely committed to dealing with California water policy and the Delta. Good news is in the eye of the beholder. I think the Governor's involvement and his hands-on approach suggests that the era of seeking unanimity is over. Over the next couple of years, the risks are higher for every one of us, but there is a greater likelihood of some outcome because for the first time in five governors, there is a governor committed to dealing with these issues.

QUESTION FROM THE AUDIENCE: What happens if the transmission lines go out? Can you group the lines and other infrastructure into one?

PON: We do have some ability to shift electric power to elsewhere on the grid, depending on the time of day and time of year. There is no real substitute for underground gas storage on MacDonald Island because it is a special natural formation of the island and is very conducive to natural gas storage. No equivalent location in California. We also need it close to the heart of where it is needed. Question is how to route that gas to the service area. The new line will be on a new route and we're trying to minimize flooding with new technology. Trying to minimize external forces but a lot of time those external forces are fixed and we have to design around it.

AJISE: There are alternatives. We would have detours and such and some of the traffic would find its way in, but for commercial operations, the detours might not be as economical. During the Jones Tract break, it was clearly understood what CalTrans has at stake.

QUESTION FROM THE AUDIENCE: Do you have any idea the capacity of the other roads to absorb the additional traffic?

AJISE: Frankly, I'm not sure we can create enough capacity on alternative corridors. Referred to a study recently completed on Highway 12 with SJCOG and alternatives to increase its capacity. It would be nice to have capacity increased on Highway 12, but I am not sure of the financing, especially when you consider the needs regarding the bridges.

COMMENT FROM THE AUDIENCE: When there's an accident you get a glimpse of what could happen. •

The good news is that after 20-some-odd years, we have a governor who is absolutely committed to dealing with California water policy and the Delta. … the risks are higher for every one of us, but there is a greater likelihood of some outcome because for the first time in five governors, there is a governor committed to dealing with these issues.

– Randy Kanouse, East Bay MUD

JUNE 7, 2006

Delta Levees: Can and Should Risks to the System be Overcome?

Panelists:

ALF W. BRANDT, *Principal Consultant, Assembly Committee on Water, Parks and Wildlife*
JOHN CAIN, *Director, Restoration Programs, Natural Heritage Institute*
DENNIS MAJORS, *Engineering Program Manager, Water Resources Management Groups, MWD of Southern California*
CHRIS NEUDECK, *Vice President, Kjeldsen, Sinnock and Neudeck*
Moderator: **TOM PHILP**, *Associate Editor, The Sacramento Bee*

TOM PHILP: Discussed the problem with land subsidence and his effort to find a way to visualize the subsidence. He said he determined that the Rose Bowl is equivalent 85 million gallons of water – how many Rose Bowls in the Delta? 8,000 empty Rose Bowls behind levees. How fast are more Rose Bowls being created with subsidence? One new Rose Bowl accumulated every 12 days. In two words or less, considering today's conditions, can the risks be overcome?

There have been 162 levee failures the last century. None were because of seismic activity. Some were sunny day failures. High water is a major cause. … We need to look at the variety of risks.

– Dennis Majors, MWD of Southern California

ALF BRANDT: Don't know yet.

JOHN CAIN: Yes.

DENNIS MAJORS: With strategic actions.

CHRIS NEUDECK: Absolutely yes.

PHILP: In my own viewpoint: no, containment only. Should the risks be overcome?

BRANDT: Completely? We don't have the financial resources. Reduce risks? Yes.

CAIN: Managed risks.

NEUDECK: Reduce risks associated with use

PHILP: What risks do you worry about the most?

CAIN: Jeff Mount's 60 percent analysis of the potential Delta failure makes you pay attention. Two major concerns: seismic or levees overtopping in a flood are hazards. We should take apart his scenario and decide what to do.

MAJORS: There have been 162 levee failures the last century. None were because of seismic activity. Some were sunny day failures. We need to look at the variety of failures. High water is a major cause. We could have a 6.5 earthquake like DWR [Department of Water Resources] said. We need to look at the variety of risks.

PHILP: Is seismic risk not a big concern because there is no past event associated with a levee break?

CAIN: The research is important. Some of the top officials at DWR have historically said that we need to focus on the problem with overtopping because that could occur in any year. There's some truth to that; there is a real need to deal with more immediate risks.

NEUDECK: These doom and gloom scenarios are good to get us all here. Most of the flood memories have a half-life of about six months; this one has lasted longer because of [Hurricane] Katrina. There have been162 levee failures in the last century. But since the 1980 subventions program, there have been fewer than 12 levee failures with a small investment of $100 million.

BRANDT: The levee break we should be most concerned about is the one that is never anticipated like Jones Tract. A major failure would cause a major problem with salinity intrusion. The world changing so quickly we need to look at new options. In the CALFED program, levees were pretty much of an afterthought. No new programs were established. The world has changed. Levees are now more important with climate change. If the bond passes, it will provide millions of dollars for Delta levees.

CAIN: The ultimate unexpected event is an earthquake. With high tides or a flood, we can perhaps get ready. If levee repairs are not an ongoing effort, emergency responses are compromised. A better emergency response system will be needed if there are more emergencies from levee failures.

MAJORS: We need to focus on a strategic upgrade. Target certain areas and help sustain those. If a big break occurs, all water exports will be curtailed for a long time. If strategic upgrades are made in certain areas, we might be able to redirect the flood and reduce salinity at the export pumps.

NEUDECK: Half of the subventions program comes from the state. The other half from the locals. The eight western Delta islands are of the most concern and the state can [concentrate] on funding on one island.

PHILP: How much should MWD contribute?

MAJORS: Beneficiary pays makes lots of sense. Export areas should be part of the formula.

PHILP: What should exporters pay?

NEUDECK: I don't have a number. Reliable funding is needed; financing levee maintenance through bonds is not a secure way to fund projects.

CAIN: We're wasting time on who pays. I would rather talk about what we're going to do to try and reduce flood risk. We're trying to protect uses. If one farm is flooded, the farmer should pay. If it's an island with more effect on the pumps, the exporters should pay. We need to determine the risks to who, homes, farms and water projects; what, infrastructure and people; and where – we need to do different things in different parts of the Delta to reduce risk. If we have real specifics of what to do then it will be easier to figure out who pays.

PHILP: How cooperative are the interests in stepping forward for funding on John's plan?

BRANDT: Everyone has a sense of the projects that are the most important. No one wants to pay. "Beneficiary pays." People like the idea but when it comes to actually doing it…. We have introduced bill after bill, but no one is stepping up.

PHILP: What would the flood bond do for the Delta? What won't it do?

BRANDT: The bond would provide $200 million for Delta levee system, but as part of the process inherent to getting to do that is completing the DRMS [Delta Risk Management Study]. This is a major new commitment, but cost-sharing is not spelled out. An additional $500 million for levees is worded broadly enough it could be added to the Delta money. The Delta Risk Management Strategy is an important part of channeling major funding.

Everyone has a sense of the projects that are the most important. No one wants to pay. "Beneficiary pays." People like the idea but when it comes to actually doing it…. We have introduced bill after bill, but no one is stepping up.

– Alf Brandt, Assembly Committee on Water, Parks and Wildlife

PHILP: How much would that money help?

MAJORS: It would help quite a bit. We almost lost Twitchell Island in January. There is now about 3 feet of freeboard at that levee and we really do need to increase it. One way to do that would be to build a setback levee to provide for greater flood protection. Being strategic about how these funds are used and directing our funding to the weak link, to one island, to one place could improve the [entire] system quite a bit.

NEUDECK: The idea of strategic planning is OK, but we need to preserve the Delta as a whole. At Twitchell Island, there were ocean-sized waves in January. It was a situation of very extreme forces. If some islands are identified as not important, it makes the "important" islands even more important [to protect the system]. We can isolate and support special projects, but we also need to protect other interests. What's a strategic approach to sunny day failures?

PHILP: Are you worried the bond won't pass?

NEUDECK: Yes. We recently had a local election for one reclamation district to increase funding for pumps, levees, etc. The average cost was $62 per home – only $5 a month. It passed by less than 2 percent. You can't ask for a better to time to ask for money. But that assessment barely passed at only $5 a month.

We're wasting time on who pays. I would rather talk about what we're going to do to try and reduce flood risk. We're trying to protect uses.

– John Cain, Natural Heritage Institute

CAIN: If we unite on an issue supported by all groups and newspapers it will probably pass. [But] if the Reclamation Board puts more homes in the floodplain at some time we'll be asking for more money, would the Sierra Club support the bond?

BRANDT: Polling does show support for it because of [Hurricane Katrina] images on TV. Also, we have the governor and Legislature working together. I'm hopeful there will be broad support.

PHILP: How can you know that a levee may have a sunny day failure?

MAJORS: The problem is we don't know the levee foundation because they're 80 to 100 years old. They weren't engineered. We could put in borings every 500 feet, but that doesn't tell you about rodent holes. There are certain ways you can deal with it. Setback levees have been used in areas protecting urban areas. Slurry walls could be used, but these are very expensive.

NEUDECK: In addressing sunny day failures, the value of inspections can't be understated. The farmers are the eyes and ears for these earthen structures out there on the ground looking at this daily.

CAIN: There's no substitute to eyes on the ground. Keeping farmers in business is a big component of this. Farming needs to be profitable.

PHILP: How can we minimize flood risk?

NEUDECK: There are two different levee systems: riverine levees only have seasonal flows. Delta levees have water on them every day and there is 3 to 4 feet of difference between a flood tide and a regular tide.

PHILP: Which islands are most critical to protect for water quality?

MAJORS: DRMS [the Delta Risk Management Strategy] is looking at the sustainability of the entire Delta. In the short term, we need to emphasize emergency preparedness to get ready for a big levee failure. We need to be totally prepared ahead of time. The attention will probably concentrate on the western islands.

BRANDT: There is a piece missing. It's more than just thinking about Delta levees and do we fortify them. This is not just the status quo. People need to understand the value of the Delta beyond recreation. We need to help Californians understand the Delta for all of its values.

CAIN: We risk a "levees on steroids policy." How you deal with flood risks depends on where you are. If you are upstream and the flood stage is very high, we want to reduce volume; perhaps a bypass. Within the tidal pool, where there's no peat, we may want to beef up levees. I have advised building a floodway on Sherman Island that we could purposely flood to avoid flooding Lathrop. The western, peat islands, maybe we need to purposely flood them to avoid catastrophic flooding. Other western islands we could maybe rebuild. We could take dredge materials, divide Sherman into two cross levees, move the highway and plant those cells with tules to grow peat. We could maybe fill Sherman Island in 13 years.

NEUDECK: I disagree. The zone of influence is within 300 to 400 feet. We could contain the levee and still have the island subside. Stability is not affected by deepening the interior. The idea of cells may be good, but not with peat.

PHILP: Fifty years from now, what is your Delta levee vision?

CAIN: What are we trying to achieve? Instead of a deep hole, maybe we should leave our children with a marsh on Sherman Island. If we don't work on it, the Delta will end up urbanized around the edges with urban runoff from thousands of homes. Eventually a levee will fail, putting 3 to 4 million people at risk. We'll end up with a lake for a Delta. The No. 1 thing we need to stop right now is building homes behind levees.

NEUDECK: Developing a reliable source of funding is critical; we've been working on this with a shoe string budget. Look back at 1980; in 26 years we've done a lot of things with $100 million. We need to protect the use of agriculture. We do need a higher level of flood protection for urban areas. Levee setbacks can provide for global warning; we can raise levees with adequate setbacks. We are doing that with Stockton. Even with 3 feet of sea level rise we can raise the levees.

MAJORS: We could see some very, very secure areas. Some very stable areas in the Delta can be fortressed. We will still have agriculture, but perhaps with changed uses and we might see a marsh.

Philp: What will have to happen in the Legislature to alter the status quo? Is consensus gone? Is it more of a package deal?

BRANDT: Don't abandon consensus, but we may need to make decisions that don't have consensus. Some areas might be abandoned: that kind of visual can help change the status quo. The biggest challenge is that there are not enough representatives that really understand the Delta. And change requires that people in southern California understand the Delta issues. •

In addressing sunny day failures, the value of inspections can't be understated. The farmers are the eyes and ears for these earthen structures out there on the ground looking at this daily.

– Chris Neudeck, Kjeldsen, Sinnock and Neudeck

Delta Risk Management Strategy: The Science Behind the Issues

Panelsts:

GILBERT COSIO, *Vice President, MBK Engineers*
WIM KIMMERER, *Senior Research Scientist, Romberg-Tiburon Center for Environmental Studies*
MARTY MCCANN, *President, Jack R. Benjamin & Associates*
LYNN O'LEARY, *Delta Program Manager, U.S. Army Corps of Engineers*
Moderator: **RITA SCHMIDT SUDMAN**, *Executive Director, Water Education Foundation*

LYNN O'LEARY: DRMS brings together a mix of people – technical expertise, agency staff and local stakeholders – to talk about the issues and information needed. This won't provide all the answers, but a lot of the key answers will be there.

DRMS brings together a mix of people – technical expertise, agency staff and local stakeholders – to talk about the issues and information needed. This won't provide all the answers, but a lot of the key answers will be there.

– Lynn O'Leary, U.S. Army Corps of Engineers

When we looked at seismic risk during the CALFED planning process, we never really looked at all risk and daily risk as a part of the whole. There is a greater sense of whole risk.

The steering committee helps assure that the study comes up with technical answers needed to guide policy. They will assure that the right questions are being answered. Both policy and science will be components of the visioning process. The steering committee will evolve; it's not certain how all the roles will unfold. The short timeframe of the study will protect against policy creeping into its findings.

WIM KIMMERER: The DRMS will not set a priority, that's a societal decision. This will enable understanding of the problem and what certain strategies mean to taking and assigning priorities. It will provide some scenarios and some insights as to what's dominating risk. Studies give us informed decisions. They don't just sit on shelves.

Previous Delta visioning proposals lacked real technical expertise of people who put that together. Science brings different issues to the table. There needs to be feedback and exchange between science/technology and the human side. DRMS would provide the technical input into the broader vision process. The vision process would rely on discussions about science, technology and natural processes. Previous efforts were not realistic. We need technical information for a vision that bears some resemblance to reality.

Getting into the question of who pays leads the discussion into the policy arena. Transparency is important. Independent, external peer-review is not perfect, but is the current best standard. There will be a technical advisory committee and perhaps the National Academy of Sciences will be involved in participatory review

GIL COSIO: It's important to present different perspectives accurately, to flush out differences and different angles. There's been a great increase in understanding the levees. DRMS can't be a study that points to more studies.

This study can assist the visioning process by describing the primary and secondary benefits of levees and by showing connections: urban sprawl contributes to loss of farmers and a greater dependency on foreign food. This study will broaden out and look at secondary and tertiary benefits. The key is to present all perspectives accurately. If we wait any longer, it will be hard to keep these levees going.

MARTY MCCANN: There appears to be a degree of unanimity we need to recognize what the risks are. DRMS won't set priorities but will help understand the problem a lot better than today. The study would provide a sound information base about risk and mitigation strategies that allow informed decisions about the Delta future. Risk information would inform what we do and how we get there. The study will not address the issue of who pays. There will be information about levee benefits and values, as well as pressures on neighboring environments. The DRMS will look at past studies and the validity of studies. Basic information will be integrated into a broader framework and a robust risk model. In each technical area that the study addresses, engineers and scientists will start with basic data. Some data is not definitive and leads to different conclusions; policies or values can affect interpretation of data. There will be a discussion from an informed technical community about how those interpretations of fuzzy data are or can be used.

Within 18 months, by July 2007, we will have the results of Phase 1 [risk analysis] and Phase 2 [insights from risk analysis and alternative strategies to address those risks]. There will be interim products that feed into the visioning process. The pace is fast, hectic. This is only the beginning.

"Levees on steroids" will be analyzed in the sense of what's out there and what's the likelihood of failure. Looking out 200 years – getting a sense of risk trends is difficult. Are things getting better or worse? Why? Risk is increasing and the study will look at future development. Seismic and natural events may dictate what happens – looking at 200 years out may not be practical sense.

In each technical area, such as seismic risk, it comes down to who is doing the work. I fully expect there is data with varying interpretation. We will try very hard to present what the informed technical community has to say.

The Department of Water Resources is coordinating the DRMS and data is being drawn on from both the private and public sector. Staff will be working together diligently as a team to obtain up-to-date and valid information. The ultimate objective is to provide a sound, valid assessment of what we know, how well we know it and what the risks are. We will be looking at hypotheses and the details that inform hypotheses. DRMS does put an emphasis on levees and what happens if levees fail. It looks at what happens, hydro-dynamically, economically, environmentally [species, habitat and aggregate measures], and to the state.

Mitigation measures, including the Peripheral Canal and tidal gates, will be addressed during Phase 2. This will examine risk reduction benefits of any and all strategies; however, this is not a planning study and it will not look at cost-benefit or design considerations.

While the modeling will not use a GIS system, many of the results will be displayed using GIS. A lot of work is currently going into formatting information into a GIS-system. Generally, the study will not generate new information or new measurements; however, the DWR geophysics study could inform the framework. Real-time measurements and sensors might be part of a future strategy.

Previous Delta visioning proposals lacked real technical expertise of people who put that together. … We need technical information for a vision that bears some resemblance to reality.

– Wim Kimmerer, Romberg-Tiburon Center

A number of attributes will help assure that the science and the process is transparent and unedited. We need the assistance of people with involvement throughout the Delta. We have a responsibility to get people engaged at the most fundamental level. There is a commitment to outreach and engagement to those with a stake or interest, including public meetings.
The technical teams have been asked to draft a white paper – describing what they will do, how they will do it and the associated cost and timeframe. Those outlines will be available in draft form. We have the right people in the room working on this, in terms of the technical expertise and breadth of this team

Technical issues need to be informed by policy needs. This is not the only technical study needed or being done in the Delta. •

Delta Vision:
Meeting the Challenges

Secretary Mike Chrisman remarked that the conference and vision process is emblematic of informed public dialogue. With the reorganization of CALFED, not a day goes by that the Agency isn't dealing with water or Delta issues. These topics are very much on everyone's mind. What happens in the Delta is critical for all of us. The administration has a continued and ongoing commitment to the Delta. The programs may seem duplicative and overlapping, as are the issues. A comprehensive plan is needed, as is a comprehensive and long-term vision.

MIKE CHRISMAN, *Secretary, California Resources Agency*

The Delta provides California's largest water distribution system: supplying water for 23 million people, providing irrigation for 7 million acres and covering more than 700,000 acres. The area is characterized by homes for rapidly growing communities, utility and transportation systems, agricultural and economic productivity and an ecosystem responding to changes in landscape, salinity and water quality. Levee stability has come to the forefront of public awareness.

There is no way to understate the consequences of catastrophic levee failure. Sustaining the Delta will not result by happenstance or maintaining the status quo. People are cooperative looking for solutions that support multiple purposes. The objective is to create a realistic, shared vision for coordinated response based on strong, integrated leadership. Input from this conference and from other stakeholders is needed to develop a framework for the Delta visioning process. Our choice is to act now or keep postponing and face devastating consequence in the next 50 years. There is no way to overstate the risks.

We can't sustain the Delta with its current uses by letting it just happen. Making a more sustainable Delta is a significant undertaking. We need solutions with multiple purposes and a realistic, shared vision of the Delta's future.

Strong integrated leadership will be necessary to addresses:

- objectives of AB 1200
- integration of separate planning processes
- scenarios of continued practices and the consequences for water quality, conveyance, ecosystems and infrastructure
- implementation visioning priorities
- emergency response plans

The first steps include creating a strong foundation with stakeholders for the vision, as well as technical data collection. Bold, forward-thinking approaches are needed for coordinated integration of programs to support the Delta. Challenging questions will address development, its impacts and the state role in land use decisions. Levee decision-making includes the Reclamation Board. Informed public dialogue needs to help shape those decisions.

Public trust responsibility will not be surrendered. Issues will be addressed in an open and transparent manner. This effort will focus on the Delta itself, while remaining aware of upstream and downstream decisions that impact the Delta. All issues can and will be looked at, including the role and authority of the Delta Planning Commission, boating, and findings by other efforts such as the California Water Plan and the Bay Delta Advisory Committee.

Land use decisions remain in local hands but there is a need for an "informed dialogue" on what development should mean. •

Finding Common Ground: Developing an Effective Visioning Process

(Following the panel presentations, the Center for Collaborative Policy organized a series of self-facilitated breakout group sessions where conference participants were encouraged to address several key Delta issues from a variety of viewpoints. Summary Notes prepared by the Center for Collaborative Policy)

GREG BOURNE, *Managing Senior Mediator, Center for Collaborative Policy*
GREG WEBER, *Professor of Law, University of the Pacific, McGeorge School of Law*

The Center for Collaborative Policy has been involved in a number of collaborative processes. When looking at systems as complex as the Delta, it's inevitable that the solutions will be collaborative in nature. No one hundred of us have all the information. Solutions must meet major underlying interests; solutions emerge from the intersection of multiple interests and expertise.

This conference represents the start of a broader visioning process. There are already networks of relationships and a tremendous amount of information to support this process. The most important single skill is the ability to listen. We've been listening along with you and your good thoughts will not vanish – a high level summary document will capture key ideas and key tensions heard here.

This process will address what people really want to talk about: carrying capacity, land use, emergency responses and what gets protected or let go. This conversation is embedded in a set of existing values. The problems of the Delta need to be defined and solved together – there are very few mutually exclusive activities.

This effort will use a hybrid approach, with strong leadership relying on active participation of stakeholders. Stakeholder processes, working in concert with political approaches, could work well in this setting. The vision framework will create a plan for action, discussing actions within specific timelines.

Many have said that the status quo is not acceptable, yet nobody is really willing to change. At this point, that perspective is not unreasonable or surprising – people are looking to see what others are doing and what tradeoffs will be necessary. There will be incremental movement forward in working through challenging questions that cannot be addressed singularly or in the abstract. This includes sorting out the state role and looking at scientific uncertainty. Agreement can be reached on the status of data and the conclusions that can be drawn, as well as identifying additional research needs and priorities.

Visioning provides all of us with an opportunity to step back and think about the future. The last session of this conference is structured to hear from everyone at this conference. This initial feedback provides the initial foundation for an assessment. Interviews, focus group conversations and perhaps on-line survey will seek out additional details. This assessment will help structure the original design for the visioning process. There will be a range of opportunities for people to stay as engaged as possible.

In addition to asking you to think about particular questions, please look at the visioning map and expand on the efforts that are already underway in the Delta and who the key stakeholders are.

Group Discussions – Report Outs

Questions:

I. How are your interests being met, or not being met, by the status quo?
II. What should be the key outcomes of the visioning process; how can we ensure that the process is trustworthy and credible?
III. What key information do we need to know?
IV. What are the difficult issues that nobody wants to talk about?
V. What actions could be taken now?
VI. Question I: How are your interests being met, or not being met, by the status quo?

➤ **Interests met:**

a. the Delta subvention program is a success
b. emergency response to storm and emergency conditions is good
c. flood issues now recognized as real threats to long-term Delta health
d. agricultural water quality and supplies are sufficient
e. recreational needs are being met – but could be better
f. levee maintenance is good and improving
g. open space, habitat and recreation are currently considered
h. water management tools are improving
i. salmon trends are up
j. infrastructure is in place

➤ **Interests not met:**

a. municipal and industrial water quality is not OK
b. State Water Project reliability is not OK
c. funding for levee maintenance is not good
d. improve public access
e. better inclusion of environmental justice in policies moving forward
f. enforcement of the SB34 program
g. better awareness and education is needed about the Delta
h. inclusion of the Suisun Marsh ecosystem
i. seeing the Delta as a unit
j. dealing with population pressures
k. levees are not structurally stable over the long-term
l. political leaders not adequately engaged or informed
m. dealing with salinity intrusion

➤ **Other discussion topics:**

a. sustainability of water exports, in terms of supply and water quality
b. dry year water supplies for fisheries
c. reliable flood protection
d. through-Delta conveyance impacts on endangered species
e. level of emergency response for large event effects
f. re-use of dredge materials for levee repair
g. broadening the working landscapes approach into a statewide approach

VII. Question II. What should be the key outcomes of the visioning process; how can we ensure that the process is trustworthy and credible?

ß Key outcomes:

a. resolution of funding issues and beneficiary pays issue
b. implementing an action plan with timeline, funding, evaluation
c. things happen on the ground
d. address leadership and governance issue (like expand DPC, self-funded)
e. balanced use between habitat and water delivery – tradeoff
f. addressing water quality (salt management plan needs to recognize that temperature and salinity regimes will change, acknowledge variability of seasonal and global climate change)
g. direct assessment and quantification of water available for export
h. committed funding and implementation for priorities
i. set up reasonable expectations, with performance measures that people can agree on
j. define the role of the State Board of Reclamation

➤ **Credible process approach:**

a. greater public outreach to build trustworthiness
b. open and transparent meetings, peer review, no back room deals
c. meetings outside of Sacramento
d. provide definition of success up front
e. a process supportable by all, with involvement of local government

f. objective facilitation using existing entities such as DPC
g. respect outcomes of scientific studies
h. lateral communications with no singe entity as overarching authority
i. no taboo subjects or sacred cows – fair and open discussion on all topics
j. be willing to take on the difficult issues

VIII. Question III. What key information do we need to know?

➤ **Data needs:**

a. resolve questions regarding linkages between pumping and fish
b. look at distribution of snails – what do they need to survive
c. discuss future contaminants and were they will come from
d. what are the key water quality components, where is monitoring needed
e. quantify levee stability / structural evaluation of levee deficiencies
f. identify emergency response capabilities and processes
g. convert data into usable information and share it, understanding leads to knowledge
h. what is a sustainable yield for export – compare water rights to water in the system
i. define benefits and costs associated with different options
j. additional research on global climate change and implications for sea levels – look at uncertainty of climate change projections and implications regarding snow pack, storage, thermal capacity, changing temperatures and different supply demands

IX. Question IV: What are the difficult issues that nobody wants to talk about?

➤ **Difficult issues that aren't being talked about:**

a. economics and financing (including sustainable economics)
b. land use issues and authority - striking balance
c. the influence of the building industry association
d. water management (isolated facilities/too much water being diverted)
e. population growth and urbanization
f. disenfranchisement and under-represented communities of minorities and the poor
g. the Delta as a marsh could survive
h. levels of bureaucracy and DWR contracting
i. lack of public knowledge about the Delta
j. subsidence issues
k. where will construction materials come from
l. an updated flood control plan that looks at flood control improvements outside the Delta – how much water does the Delta need to accommodate
m. how the flow of money relates to the flow of water – where does money go, who gets it? how does that influence decisions about water?

X. Question V: What actions could be taken now?

➤ **Actions that can be taken**

- strengthen DPC
- estimate economic impacts to all
- develop a good public relations program, including statewide education program on importance of Delta to the state as the whole and recreation and tourism
- make available information accessible on-line, including 100- and 200-year flood maps (as is and should levees fail)
- flood awareness lines on every pole in the Delta
- reauthorize levee subversion program
- reduce reliance on Delta water export
- be opportunistic – have funding for land acquisition and other activities with short windows of opportunity
- develop a robust emergency response, look at tidal gates
- plan and manage for recreation and tourism
- put a moratorium on construction within 100 year floodplain
- look at a network of COGs to coordinate land use policies
- take action to protect levees on western islands.

Developing a Delta Vision Conference Summary

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